

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

BODY COMPOSITION AND NET PROTEIN REQUIREMENTS OF GROWING LAMBS

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Body composition is a tool that allows the estimation of animal nutritional requirements especially in protein. The objective was to determine protein requirements of growing lambs. Twenty-seven Santa Ines lambs with 31.6 kg (± 1.6) of body weight (BW) were arranged in a completely randomized design and distributed in 4 experimental groups: reference (slaughtered at the beginning of the assay), *ad libitum*, 30% and 50% of feed restriction. After reference group slaughter animals entered the trial in triplets. Diet for restricted animals was calculated based on the dry matter consumption of the *ad libitum* lamb of each triplet. When the *ad libitum* lamb of each triplet reached the slaughter weight (47 kg of BW) the others lambs were also slaughtered. Experimental diet composition was: 16.58% of CP and 2679.24 kcal.kg⁻¹ of metabolizable energy (ME) on dry matter basis. Body composition and net protein requirement for gain were evaluated. Experiment was conducted according to the classical comparative slaughter methodology. Protein body content (kg.kg⁻¹) observed for reference, *ad libitum*, 30 and 50 % of feed restriction were 0.158, 0.155, 0.162, 0.180, respectively. The equation that describes retained protein content in the body as a function of empty body weight (EBW) is: $CP \text{ Log} = 0.8477 \text{ EBW} \log - 0.0974$ ($r^2 = 0.8057$). The estimated mean protein retention in one kilogram of gain by lambs of 30, 35, 40 and 45 kg of BW are 144.14, 140.81, 137.99, 135.55 g.kg⁻¹ and 124.26, 121.39, 118.96, 116.85 of EBW. A lamb with 30, 35, 40, 45 kg of BW gaining 250 g.day⁻¹ needs 31.07, 30.35, 29.74, 29.21g.day⁻¹ of net protein. As body weight increases body protein content decreases proportionately and this has a direct impact on protein requirement.

Keywords: comparative slaughter, growth, nutrition, sheep

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